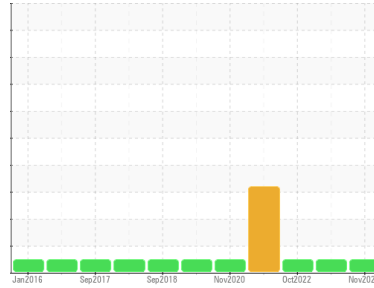




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**THUNDER SPIRIT [200005313]**  
 Machine Id  
**42WEA84006 (S/N 45417)**  
 Component  
**Hydraulic System**  
 Fluid  
**SHELL TELLUS S4 VX 32 (--- QTS)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>NX014822</b>	NX011683	NX011663
Sample Date	Client Info		<b>27 Nov 2023</b>	03 Feb 2023	28 Oct 2022
Machine Age	hrs	Client Info	<b>57431</b>	52312	50558
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		<b>17</b>	16	7
Iron	ppm	ASTM D5185m >20	<b>3</b>	2	4
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m >20	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	0	<1
Lead	ppm	ASTM D5185m >20	<b>3</b>	3	4
Copper	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m >20	<b>2</b>	1	3
Antimony	ppm	ASTM D5185m	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	<b>5</b>	0	<1
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m	<b>&lt;1</b>	0	2
Calcium	ppm	ASTM D5185m	<b>&lt;1</b>	0	3
Phosphorus	ppm	ASTM D5185m	<b>550</b>	519	574
Zinc	ppm	ASTM D5185m	<b>108</b>	114	152
Sulfur	ppm	ASTM D5185m	<b>655</b>	547	617

## CONTAMINANTS

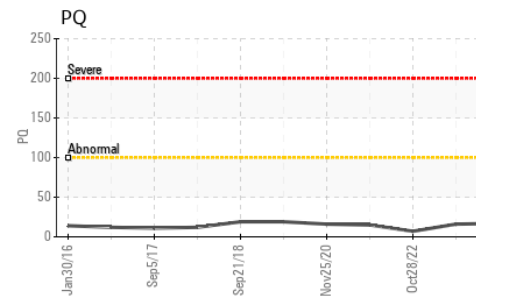
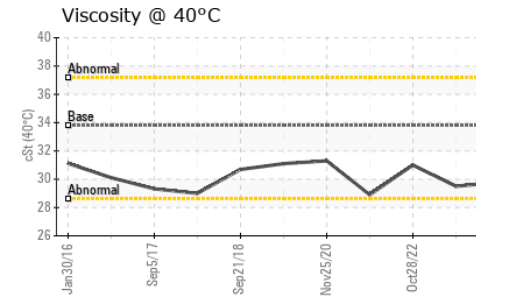
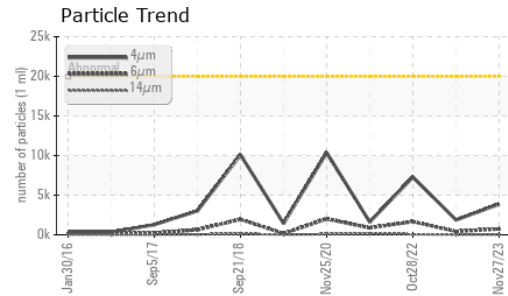
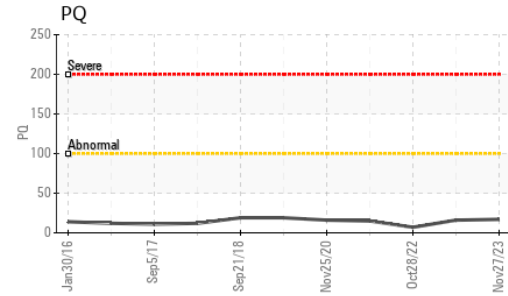
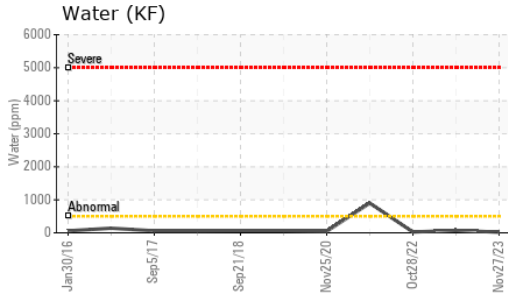
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<b>5</b>	4	7
Sodium	ppm	ASTM D5185m	<b>0</b>	0	1
Potassium	ppm	ASTM D5185m >20	<b>2</b>	0	0
Water	%	ASTM D6304 >0.05	<b>0.002</b>	0.007	0.002
ppm Water	ppm	ASTM D6304 >500	<b>20</b>	71.2	25.0

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>3861</b>	1875	7286
Particles >6µm	ASTM D7647	>2500	<b>742</b>	421	1661
Particles >14µm	ASTM D7647	>320	<b>37</b>	20	62
Particles >21µm	ASTM D7647	>80	<b>7</b>	6	10
Particles >38µm	ASTM D7647	>20	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>4	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>21/18/15	<b>19/17/12</b>	18/16/11	20/18/13



# OIL ANALYSIS REPORT

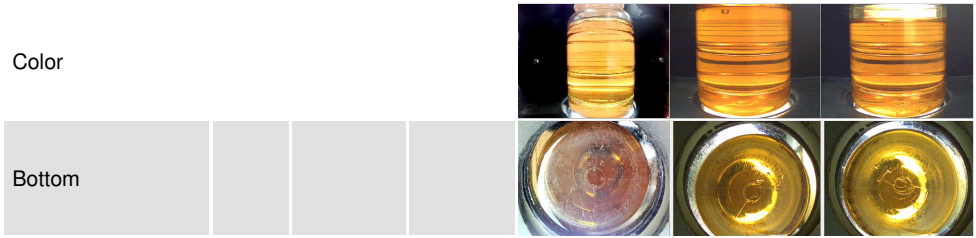


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.15</b>	0.17	0.18

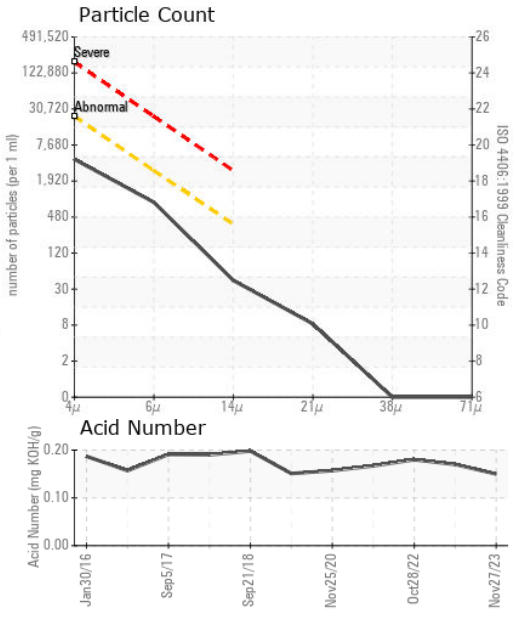
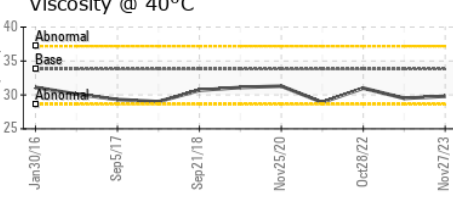
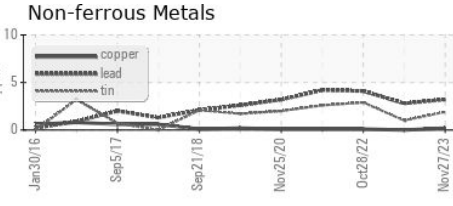
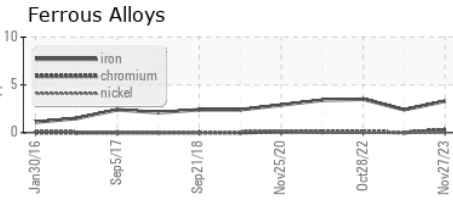
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	NEG
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	33.8	<b>29.8</b>	29.5	31.0

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX014822 **Received** : 07 Dec 2023  
**Lab Number** : **06027713** **Diagnosed** : 08 Dec 2023  
**Unique Number** : 10777504 **Diagnostician** : Doug Bogart  
**Test Package** : IND 2 ( Additional Tests: KF, PQ )

**NORDEX USA - Chicago**  
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 US 60606  
 Contact: DEREK BRACKEL  
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 T: (701)209-0326  
 F: (312)386-7102

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)